IN THE CLAIMS

Please amend Claims 1, 8 and 15 as shown below:

1. (Currently amended) In a computer network, a method for predicting an optimum transmission frame length, comprising:

assessing transmission channel quality in said computer network, said assessing comprising;

obtaining a bit error rate for a previous transmission; and

obtaining an optimum frame length for said previous transmission;

calculating an optimum length for said transmission frame, said calculating comprising;

measuring a new bit error rate; and

obtaining an assessed random processing noise;

adjusting the length of said transmission frame, said adjusting predicated on said bit error rate and said optimum frame length for said previous transmission and said new bit error rate and said assessed random processing noise;

transmitting said transmission frame of said adjusted length; and

assessing the quality of said transmission of said transmission frame, wherein said transmission channel quality is assessed recursively using a Kalman filter.

2. (Original) A method as described in Claim 1 wherein said computer network is implemented as a wireless Ethernet.

3. (Original) A method as described in Claim 1 wherein said assessing of said transmission channel quality is achieved by measuring the bit error rate of said transmission channel.

4. (Original) A method as described in Claim 3 wherein said measuring said bit error rate comprises measuring said bit error rate of a previous transmission.

5. (Original) A method as described in Claim 1 wherein said calculating of said optimum length for said transmission frame is accomplished in a dedicated transmitting device.

6. (Original) A method as described in Claim 1 wherein said calculating of said optimum length for said transmission frame is accomplished in a computer.

7. (Original) The method described in Claim 1 wherein said assessing the quality of transmission is accomplished by measuring the bit error rate of said transmission.

8. (Currently amended) A system for optimizing transmission frame size in a network, comprising:

a network comprising one or more computers and one or more wireless communication devices;

wireless communication communicatively connecting said computers and said wireless communication devices in said network wherein said wireless communication transmits data using data transmission frames; and

a transmission device enabled to adjust the length of said transmission frames based on a method comprising:

assessing transmission channel quality in said computer network, said calculating comprising;

measuring a new bit error rate; and

obtaining an assessed random processing noise;;

calculating an optimum length for said transmission frame, said calculating comprising;

measuring a new bit error rate; and

obtaining an assessed random processing noise;

adjusting the length of said transmission frame, said adjusting predicated on said bit error rate and said optimum frame length for said previous transmission and said new bit error rate and said assessed random processing noise;

transmitting said transmission frame of said adjusted length; and

assessing the quality of said transmission of said transmission frame,

wherein said transmission channel quality is assessed recursively using a Kalman filter.

9. (Original) The system described in Claim 8 wherein said network is implemented as a wireless Ethernet.

10. (Original) The system described in Claim 8 wherein said transmission device adjusts said length of said transmission frames to a predicted optimum frame length.

11. (Previously presented) The system described in Claim 8 wherein an element of said network is enabled to assess the bit error rate of transmission in said wireless communication.

12. (Previously presented) The system described in Claim 8 wherein an element of said network is enabled to assess random processing noise in said wireless communication.

13. (Original) The system described in Claim 8, wherein said optimum frame length is predicted by use of a Kalman filter.

14. (Previously presented) The system described in Claim 13 wherein said Kalman filter employs random processing noise and bit error rate in said predicting of said optimum frame length.

15. (Currently amended) A data transmission frame for network communication comprising:

a header section comprising one or more fields of header data;

a data field sequentially coupled with said header section and having a length capable of adjustment; and

an error checking field sequentially coupled with said data field and said header section, wherein said data field is adjusted to an optimum length for transmission using a method comprising:

assessing transmission channel quality in said computer network, said assessing comprising;

obtaining a bit error rate for a previous transmission; and

obtaining an optimum frame length for said previous transmission;

calculating an optimum length for said transmission frame, said calculating comprising;

measuring a new bit error rate; and

obtaining an assessed random processing noise;

adjusting the length of said transmission frame, said adjusting predicated on said bit error rate and said optimum frame length for said previous transmission and said new bit error rate and said assessed random processing noise;

transmitting said transmission frame of said adjusted length; and

assessing the quality of said transmission of said transmission frame, wherein said transmission channel quality is assessed recursively using a Kalman filter.

16. (Original) A data transmission frame as described in Claim 15 wherein said data transmission frame is an Ethernet standard data transmission frame.

17. (Original) A data transmission frame as described in Claim 15 wherein said data field is adjusted using a prediction of said optimum length.

18. (Original) A data transmission frame as described in Claim 17 wherein said prediction of said optimum length for transmission calculated by a Kalman filter.

19. (Original) A data transmission frame as described in Claim 17 wherein said prediction of said optimum length for transmission is calculated by reference to transmission bit error rate.

20. (Original) A data transmission frame as described in Claim 17 wherein said prediction of said optimum length for transmission is calculated by reference to random processing noise.